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SOURCES, RESERVES, AND CONVERGENCE OF THE SERBIAN ECONOMIC GROWTH

- *Jobless Growth of the Serbian Economy –*

by

Milenko POPOVIĆ[1]

Abstract: The topic of this paper is an analysis of the growth of the Serbian economy. The paper is primarily devoted to the analysis of the sources of growth of the Serbian economy. In this regard, apart from conventional decomposition of growth (into contributions of capital, labor, and total factor productivity), the demand side and the industry composition sides of the sources-of-growth analysis are also considered. Furthermore, on the basis of these results, the reserves for further growth of the gross domestic product per capita are identified and estimated. Special attention is given to a possible increase in the total factor productivity, induced by the advance in "broader knowledge", and to an increase in the labor participation rate. Institutional and policy prerequisites for realization of these reserves of growth are also briefly analyzed. Finally, on the basis of different assumptions regarding magnitudes of realization of these reserves, future convergence of the Serbian economy toward E15 and E27 countries is given.

Key Words: sources of growth, growth reserves, convergence

JEL code: O40, O43, O47

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Acemoglu (2008) makes a distinction between "proximate" and "fundamental" causes of growth. Proximate causes, usually given within the framework of the sources-of-growth analysis, are based and developed according to the Solow's growth model. The end result of this analysis is decomposition of the growth rate of the gross domestic product into the absolute and relative contribution of the increase in employment, the increase in capital and the increase of the total factor productivity. The growth rate of the total factor productivity is further decomposed into the contribution of human capital (skills), advance in applied knowledge (sometimes referred to as embodied technological progress), the contribution of organizational innovation, structural changes, and similar.[2] In one or the other form it captures different kinds of knowledge and this is why the total factor productivity is sometimes referred to as the advance in "broader knowledge".

On the other hand, the so called "fundamental" causes of growth refer mainly to institutional but also to cultural, geographical, and some other factors, including pure luck. These factors determine the rate of growth by determining the rate of formation as well as the efficiency of usage of proximate factors enumerated above. While differences in the proximate causes explain differences in income levels, the answer to the question why growth rates differ among countries and within the same country at different times, can be obtained only after the analysis of fundamental factors.

This paper is primary focuses on the analysis of proximate causes of growth. Due to a lack of long time series of data, caused mainly by changes in national accounting systems that occurred at the end of the last century, such kind of analysis is missing for Serbia as well as for most of other SEE countries, with the exceptions of Croatia and Montenegro. Now, after more than one decade, we have some decent time span data and it seems appropriate to make such an analysis. Some data are still missing and, for that reason, it was not possible to make a detailed sources-of-growth analysis. For the beginning, this paper only estimates a decomposition of the GDP growth rate into the contribution of capital, labor, and total factor productivity. This kind of a sources-of-growth analysis will, nevertheless, bring some important insight into an anatomy of the economic growth of Serbia. The results are presented in the first and the second section of the paper.

Apart from this conventional sources-of-growth analysis, the demand side and the sectoral side of decomposition of the GDP growth rate are given as well. They are presented in the third and fourth section of this paper. The results of these different sources of growth approaches presented a good basis to identify the main institutional and policy factors that have determined the anatomy of the Serbian economic growth. Thus, a brief analysis of fundamental factors is given as well within first four sections. Apart from that, it was a good basis for identifying and estimating the growth reserves for future economic growth. On the basis of all this, it was possible to establish and analyze policy and institutional prerequisites for liberation of the existing growth reserves and an increase in the future growth rate of the Serbian economy. This is given in the fifth section of the paper. On the basis of the estimated growth reserves, it was possible to simulate possible future growth of the Serbian economy and see how quickly it may converge toward EU27 and EU15 countries if existing reserves are liberated. This is presented in the sixth section of the paper. Finally, conclusions are given in the last section.

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[2] For more detailed insight into the sources of growth analysis see: Acemogly (2008), Agnion and Howit (2009), Romer (2001), Baro and Sala-i-Martin (1995), Crafts and Toniolo (1996), Mankiw (1995), Mankiw at all (1992), Madison (1982, 1987), Denison E. (1967, 1985), Jorgenson and Griliches (1967).

1. Sources of Growth Analysis

Sources of the growth analysis that follows is based on the Cobb Douglas (CD) aggregate production function and Solow's (1956, 1957) model of growth.[3] The analysis is given for the period 2000-2011 as well as for the pre-crisis period, 2000-2008, the period which, due to distortion caused by the economic crisis, reflects, in a better way, long run characteristics of the path of the Serbian economic growth than the data for the entire period. The data for investment and employment were not available for 2012. More importantly, the data for the gross value of capital, as a usual measure of "number of machines", as well as the data for the net value of capital does not exist in Serbia and we approximated it by using the perpetual inventory method, based on the available data for investment. Comparing these estimates with the value of GDP we got an average capital coefficient to be around 3 which is quite in accordance with an implied value of the marginal coefficient for this period. In order to compare the growth in the respected period with the one in the period of the socialist economy we also present the sources-of-growth analysis for the Serbian economy for the period 1965-1987. (Popovic,M., 1990).

Table 1: Sources of growth of the Serbian economy: 2000-2011

	2000-08			**2000-11**		
Sources	Growth Rate	Contribution	%	Growth Rate	Contribution	%
Capital	5.01%	1.70%	34.48%	5.83%	1.98%	56.95%
Labor	0.59%	0.39%	7.88%	-0.80%	-0.53%	-15.19%
TFP		2.85%	57.64%		2.03%	58.23%
GDP	4.94%	4.94%	100.00%	3.48%	3.48%	100.00%

Source: Author's calculations based on RZS data (Statistical Office of the Republic of Serbia)

Table 2: Sources of growth of the Serbian economy (without Kosovo and Vojvodina): 1965-1987

	1965-74			**1974-80**			**1980-87**			**1965-87**		
Sources	GrwRate	Contribut	%	GrwRate	Contribut	%	GrwRate	Contribut	%	GrwRate	Contribut	%
Capital	8.51%	2.14%	33.39%	6.68%	1.68%	25.42%	2.48%	0.63%	72.41%	6.06%	1.53%	32.76%
Labor	3.29%	2.46%	38.38%	4.42%	3.30%	49.92%	2.37%	1.77%	203.45%	3.30%	2.47%	52.89%
TFP		1.81%	28.24%		1.63%	24.66%		-1.53%	-175.86%		0.67%	14.35%
G D P	6.41%	6.41%	100.00%	6.61%	6.61%	100.00%	0.87%	0.87%	100.00%	4.67%	4.67%	100.00%

Source: Popovic, M., (1990).

Looking at the data for the entire period, 2000-2011, it is noticeable that the contribution of the increase in capital is a very important source which accounts for about 57% of growth. Strangely enough, the employment contribution is negative, around -15%. In the socialist period the contribution of labor was the most important source of growth which accounted for about 53% of growth at that period. Not less surprising is the result that the contribution of the total factor productivity (TFP) is almost 60%, much

[3] Differentiating and dividing the CD production function $Q = AC^{a}L^{(1-a)}$ with Q (GDP) we get the following well known decomposition of the GDP rate of growth: $r_Q = ar_C + (1-a)r_L + r_A$. Note that r presents the rate of growth of the variable given in subscript (C for capital, L for labor, and A for total factor productivity), while a and $(1-a)$ stand for partial elasticity of production with respect to capital and labor respectively. The growth rate of GDP is therefore decomposed in parts that measure the contribution of capital (ar_C), the contribution of employment ($(1-a)r_L$), and the contribution of total factor productivity (r_A). Based on previous measurements and on widely used practice we assumed in this analysis a and $(1-a)$ to be equal to 0.34 and 0.66 respectively.

higher than in the socialist period, when its contribution was around 14%, and much higher than in any other country during the "bell époque" period of growth, 1945-1973.

The above results are to a large extent under the influence of movement in the post crisis period and cannot be taken as a basis for approximation of the long run growth rate. In order to isolate cyclical effects, it is good to take a look at the anatomy of growth for the pre-crisis period 2000-2008. The GDP rate of growth is 4.94% and it is very close to that in the 1965-1985 period, 4.67%. It seems to be pretty safe to take this GDP rate growth as the first approximation of the long run rate of growth. The contribution of the total factor productivity is still high and very close to 60%. On the other hand, the relative contribution of employment is now positive but is still very small, 7.88%, much smaller than in the socialist period of development.

Further important insight into the growth anatomy of the Serbian economy can be obtained from the regional comparative analysis. Unfortunately, we have the sources of growth analysis only for Croatia and Montenegro. For other SEE countries we still do not have such research.

Table 3: Sources of growth of the Croatian economy

	2000-2008			**2000-2011**		
Sources	Growth Rate	Contribution	%	Growth Rate	Contribution	%
Capital	7.43%	2.60%	60.47%	6.57%	2.30%	92.00%
Labor	0.77%	0.50%	11.63%	0.00%	0.00%	0.00%
TFP		1.20%	27.91%		0.20%	8.00%
GDP	4.30%	4.30%	100.00%	2.50%	2.50%	100.00%

Source: I M F (2012)

Table 4: Sources of growth of the Montenegrin economy

	2000-2008			**2000-2010**		
Sources	Growth Rate	Contribution	%	Growth Rate	Contribution	%
Capital	8.70%	2.90%	58.15%	8.58%	2.86%	79.15%
Labor	2.10%	1.41%	28.21%	1.41%	0.94%	25.90%
TFP		0.68%	13.65%		-0.18%	-5.06%
GDP	4.99%	4.99%	100.00%	3.62%	3.62%	100.00%

Source: World Bank (2012)

We can notice first that a common characteristic of the Serbian and Croatian growth anatomy is the negligible contribution of employment in both respected periods. Both economies can be characterized as having a jobless growth path. Contrary to that, the contribution of labor to the growth of the Montenegrin economy is pretty significant (28% of growth) although much smaller than that in the socialist period (Popovic, M. 2010). On the other hand, the growth of the Serbian economy is characterized with the high contribution of the total factor productivity, while both, Croatia and Montenegro, have very small magnitude of the TFP growth rate and its negligible relative contribution to the economic growth.

The Serbian jobless growth with a high growth of total factor productivity is puzzling indeed. The contribution of the total factor productivity (TFP) is usually treated as a measure of the contribution of "broader knowledge" which includes the contribution of different forms of knowledge. Having this in mind, a natural question that follows is: Does the Serbian recent high growth rate of TFP really reflect a high increase in "broader knowledge"? Not exactly - high TFP growth is mostly the result of a peculiar privatization and other economic reforms undertaken in the first decade of this millennium. Similarly, the high contribution of labor and the low contribution of TFP in the socialist period was the result of a peculiar economic system that prevailed in that period.

During the period of socialism, the economic activity was mainly organized within the workers' self-management system in which workers tended to show strong "internal" solidarity, implying a decent wage flexibility, and a low propensity to saving, implying low "external" solidarity. In that circumstances, in order to keep the power and social peace, the state or political nomenclature, as the firms' main stakeholder (or, better, "implicit" stockholder), created hidden unemployment within the firm and provided financial resources for firms with troubles. The implicit social contract between the nomenclature and the working class was that the nomenclature would provide job security to workers in return for political stability (Županov, J. 1983 and 1983a). This is how we got the high contribution of labor and the low contribution of TFP to the economic growth in that period. The implicit social contract between the working class and the political nomenclature in the end turned out to be unsustainable. By modifying somewhat the POUM (prospect of upward mobility) hypothesis, it can be claimed that the implicit social contract broke down in the moment when the nomenclature was not able to provide the prospect of upward mobility to people.[4] It happened mainly due to the fact that process of deruralisation and urbanization, as the main source of providing upward mobility and social promotion, was almost exhausted by the end of the eighties, on the one hand, and, even more importantly, due to a lack of internal and external sources of capital necessary to create new jobs for remaining labor force not absorbed by hidden unemployment and emigration, on the other hand. The economic crisis was followed with the constitutional and political crisis. The rest is known to everyone in the world.

At the turn of the millennium, after the "October revolution", the Serbian economy was in a very bad shape. One decade was lost. The existing capacities were old, technologically obsolete, and built to serve mainly, at that time, the already non-existing Yugoslav market. Instead of adopting an active economic policy directed toward "rediscovering economy" (Hausmann at all, 2005), the new government(s) opted for all kinds of neoliberal "shocks". These "shocks" almost destroyed the domestic economy. The model of privatization was especially bad and destructive. Foreign direct investments were mainly, especially at the beginning, directed toward the so called "brown-field" investment based on privatized companies. To make a long story short and relevant for the issue being discussed, it is important to emphasize that the new domestic or foreign owners of privatized companies reduced employment in their companies to the technologically acceptable level. In other words, hidden unemployment disappeared and became explicit

[4] POUM hypothesis, formulated by Benabou and Ok (2001), claims that we should take into account individuals' expected stream of net benefits and, in that respect especially, a possibility of upward mobility to solve the puzzle that in democratic societies people do not vote for redistributive policy that would lead toward egalitarian society, something that might be natural to expect if we know that a share of those who have a below average income is much larger, around 75%, than a share of those who have higher than average income. Following the experience of communist countries, we can establish another, even more convincing and interesting, version of this hypothesis: human beings might be ready to give up democracy for an increased level of upward mobility. "Fighting for democracy" and "civil disobedience" was rare in communist countries as long as totalitarian regimes were able to provide high expectations regarding upward mobility. By using the strategy of "big push" and consequent rapid industrialization and urbanization, communist regimes were able to keep a high level of upward mobility and to hold power for so long. Similarly, the one-party-capitalism in China wouldn't be possible without a huge reserve for further urbanization and industrialization that is supposed to generate long run expectations of a high level of upward mobility.

unemployment. New investments in new or old companies, on the other hand, were insufficient to compensate for this effect and increase employment significantly. Apart from that, these new investments were mainly directed toward industrial centers, very rarely to less developed and distant regions, so that a number of "closed" companies especially increased in less developed areas that used to have labor intensive capacities. As a result, a number of employees decreased from 2000 to 2011 for about 400,000 workers?! From the sources of growth point of view the consequence is the reduced (negative) contribution of employment and the increased contribution of TFP to the economic growth.

Obviously, the recent high growth rate of TFP has been only in a small degree the result of advance in "broader knowledge". Most probably, this advancement was in Serbia as low as it was in Croatia and Montenegro. The greatest part of the TFP growth rate was the result of reduction of hidden unemployment accumulated in the previous phase of economic development. In other words, the TFP increase was the more "revealed" productivity of the already existing technology than the advance in "broader knowledge" brought with new investment. Bearing that in mind and knowing that this reserve of the TFP increase is already exhausted, we may expect the retardation of this kind of the TFP growth rate in the future. On the other hand, having in mind a large discrepancy between TFP of Serbia and the countries on the technological frontier, we may conclude that possibilities to increase TFP via advance in "broader knowledge" are enormous. The "catch-up" effect, in other words, may be the crucial reserve for the future growth of the Serbian economy. How successfully the country will exploit this reserve of growth depends crucially on an appropriate policy of development of the national innovation system (NIS). Not less important is the policy directed toward attracting good "green-field" foreign investment with a high degree of technological knowledge and with a strong "spillover" effect on productivity of domestic resources. Looking at the experience of countries that have been successful in these policies, like Ireland for example, we may with a high level of certainty guess that this reserve might be around 2.40% per year.

2. GDP per capita Sources of Growth

The analysis of the GDP per capita sources of growth that is given in the following table will be useful in focusing on and analyzing another important reserve for future growth – the increase in the labor participation rate. Basically, taking P to present population and Q to present GDP, the growth of GDP per capita can be decomposed in the following way:

$$\frac{Q}{P} = \frac{L}{P}\,\frac{Q}{L} = \left(\frac{L}{P}\right)\frac{AC^{a}L^{(1-a)}}{L} = \left(\frac{L}{P}\right) A \left(\frac{C}{L}\right)^{a} \qquad \Rightarrow \qquad r_{Q/P} = r_{L/P} + r_{Q/L} = r_{L/P} + a\, r_{C/L} + r_A$$

where, as previously, r presents the rate of growth of the variable given in subscript, while A presents the total factor productivity (TFP). The growth of GDP per capita is decomposed into a part that measures the contribution of the increase in the employment share in the population (employment population ratio, $r_{L/P}$), a part that measures the contribution of the increase in the capital labor ratio ($a\, r_{C/L}$), and a part that measures the contribution of the total factor productivity (r_A).

By applying the above analytical framework on the existing data for Serbia we got the results presented in the next table. In the following two tables we presented a similar analysis for Croatia and Montenegro. Note that the growth of GDP per capita is decomposed, first, into the contribution of the increase in the participation rate (labor-population ratio) and the contribution of the increase in labor productivity. After that, the contribution of labor productivity is decomposed into the contribution of the increase in capital labor ratio and the contribution of TFP. A plenty of interesting conclusions can be derived from these results. We will discuss only these that are most important for the kind of analysis we intend to do.

Table 5: Sources of growth of GDP per capita in Serbia

	2000-2008			2000-2011		
SOURCES	Growth Rate	Contribution	%	Growth Rate	Contribution	%
GDP per capita = GDP / P	5.22%	5.22%	100.00%	3.80%	3.80%	100.00%
Population - P	-0.28%			-0.32%		
Participation rate - L / P	0.87%	0.87%	16.64%	-0.48%	-0.48%	-12.75%
Productivity - GDP / L	4.35%	4.35%	83.36%	4.28%	4.28%	112.75%
Capital Labor Ratio - C / L	4.42%	1.50%	28.80%	6.63%	2.25%	59.37%
T F P	2.85%	2.85%	54.56%	2.03%	2.03%	53.38%

Source: Author's calculations based on RZS data

Table 6: Sources of growth of GDP per capita in Croatia

	2000-2008			2000-2011		
SOURCES	Growth Rate	Contribution	%	Growth Rate	Contribution	%
GDP per capita - Q / L	4.31%	4.31%	100.00%	2.85%	2.85%	100.00%
Population - P	-0.01%			-0.35%		
Participation rate - L / P	0.78%	0.78%	18.07%	0.35%	0.35%	12.26%
Productivity - Q / L	3.53%	3.53%	81.93%	2.50%	2.50%	87.74%
Capital Labor Ratio - K / L	6.66%	2.33%	54.08%	6.57%	2.30%	80.72%
T F P	1.20%	1.20%	27.85%	0.20%	0.20%	7.02%

Source: Author's calculation based on IMF (2012) and Croatian statistical offices data

Table 7: Sources of growth of GDP per capita in Montenegro

	2000-2010			2000-2008		
SOURCES	Contribution	Share	%	Contribution	Share	%
GDP Per capita = Q / P	3.44%	100.00%		4.81%	100.00%	
Participation rate - L/P	1.22%	35.45%		1.92%	39.93%	
Productivity - Q/L	2.22%	64.55%	100.00%	2.89%	60.07%	100.00%
Capital labor ratio - C/L	2.40%	69.87%	108.24%	2.21%	45.91%	76.43%
T F P	-0.18%	-5.32%	-8.24%	0.68%	14.16%	23.57%

Source: World Bank (2012)

Note first that, although not perfect, the GDP per capita is usually regarded as a good proxy for the level of welfare and standard of living. The less developed the country, the better measure of welfare it is. Secondly, usually the less developed the country, the more important source of its' rate of growth is the increase in the participation ratio. Finally, the increase in the employment population ratio, apart from increasing the standard of living, reduces economic inequality and eradicates poverty. In fact, it is the most powerful channel to reduce poverty. At the same time, it is the only sustainable way to do it.

Let us see how Serbia stands regarding these issues. First of all, it is noticeable that the growth rate of the GDP per capita is pretty decent if not high: 3.80% in the whole period and 5.22% in the pre-crisis period. In fact, it is higher than the growth rate of GDP itself (3.48% in the whole period and 4.94% in the pre-crisis period) which is the result of the negative growth rate of population. The Serbian GDP per capita growth rate is also higher than that of Croatia (2.85% and 4.31%) and Montenegro (3.44% and 4.81%). Taking the pre-crisis GDP per capita rate of growth as a proxy for its long run growth rate, someone might be inclined to conclude that Serbia's economic growth was welfare improving.

A closer look at the anatomy of that growth, reveals, however, that, contrary to theoretical expectations, this growth was very far from being welfare improving. In fact, due to the already discussed negligible increase of employment, the participation rate contribution to the GDP pc growth was insignificant. In the whole period its absolute contribution was negative, -0.48%, which presents about -13% of the relative contribution. In the pre-crisis period its absolute contribution was 0.87% which presents 16.64% of the relative contribution. In that respect, the Serbian growth is very similar to that of Croatia (the relative contribution of 12% in the whole period and 18% in the pre-crisis period). Both Serbia and Croatia stand worse than Montenegro regarding the contribution of the participation rate. Due to the relatively high increase in employment (1.41% in the whole period and 2.1% in the pre-crisis period), the participation rate contribution to the GDP per capita growth in Montenegro was significant indeed: in the whole period its relative contribution was 35%, while in the pre-crisis period it was around 40%. As the result of a decrease in the number of employees, by 400,000 workers, and insignificant, better to say negative contribution of the participation rate, Serbia experienced a decline in population (at a yearly rate of 0.32% in the whole period and -0.28% in the pre-crisis period) which is the best proof that an ongoing growth anatomy of the Serbian economy is far from being welfare improving.

In these circumstances, not surprisingly, the most important source of growth was the increase in labor productivity. Its absolute contribution was 4.35% in the pre-crisis period and 4.28% in the entire period, while its relative contribution was around 83% and 113% respectively. Note that its absolute contribution in both periods is almost the same, quite contrary to what we experienced with employment and other variables that showed strong volatility with respect to systematic risk. We can just wonder in what degree this really reflects flexibility of the Serbian labor market and in what degree this is the result of the increase of grey economy (unregistered workers) or some other reasons. Note also that the contribution of the increase in the capital labor ratio is significant: it explains almost one third of the labor productivity growth in the pre-crisis period and more than a half of that growth in the entire period.

Obviously, apart from the already discussed reserves related to the increase in "broader knowledge" and, in that way, generated high growth rate of the total factor productivity, an increase in the employment population ratio is the most important reserve for further development of the Serbian economy. At the same time it is the most urgent problem of Serbia and the best way to increase the standard of living, eradicate poverty, and improve the demographic picture of the nation. This reserve of growth, of course, has its limits: once 70% to 75% of the active population become employed it is not possible to rely heavily on this source of growth. A simple exercise shows (assuming no further decline in population) that if we assume those reserves to be exhausted in the next 40 years, than we can afford the absolute contribution of the participation rate to the growth of GDP per capita to be around 1.75% per year. This is a significantly better result than what we had in the last decade. The more ambitious growth of employment, the one that assumes these reserves to be exhausted in the next 30 years, implies the contribution of the participation rate to be around 2.3% per year. Even more ambitious plan that assumes the labor reserves to be exhausted within 20 years implies the contribution of the participation rate to be

3.5%. Note that, since we assumed no further decline in population, these rates of growth also present the growth rates of employment.

Having in mind that employment is not only the main reserve of growth, but also the most important problem of the Serbian society, we can conclude that even the most ambitious plan, the one that assumes the rate of employment growth of 3.5% per year, can bring Serbia to a socially acceptable level of employment only after a long period of two decades of intensive development. This growth scenario, without doubt, should be taken as a policy target. Note, however, that this scenario is intensive not only regarding the investment rate necessary to support it, but also regarding the institutional reforms and policy prerequisites necessary to make all those investment and other material requirements attainable. In this respect, we should again stress the crucial importance of completing the national innovation system (NIS). As the systematic generator of business ideas, NIS should be especially completed in the less developed regions of Serbia. After all, Belgrade, Novi Sad, Niš and possibly some other university centers do not have such great problems in generating business ideas. Less developed regions are those that need new business ideas most badly. They have been most heavily wounded by the model of growth inaugurated at the beginning of the century, especially by the liberalization of capital account and the consequent world market arbitrage in local spatial processes. Not less are important social innovations referring to the missing elements of the financial system. On the one side, we need to find way to increase domestic saving as a source of investment and, on the other hand, to find way to support those business ideas that the commercial banking cannot follow. This especially refers to small and medium sized companies located or expected to be located again at less developed regions. A good thing about this regional policy, among plenty of others, is the fact that this orientation allows development of activities that are much less capital intensive or, in other words, activities that require much smaller investment per worker. If Serbia continues to pursue the existing industrial and regional structure of investment, then, applying the above figures, we will need the growth rate of capital to be above 8% to increase the employment growth rate to the 3.5% target level. This, on the other hand, assumes the investment rate at a very high level – around 28%. In the last decade this rate was around 18%, smaller by 10%, and was to a large degree financed from foreign sources. Having all this in mind, it might be very difficult to reach the target level of the employment growth rate of 3.5% per year by keeping the existing regional and industrial structure. Obviously, regional development oriented toward now neglected regions would require a much smaller investment rate necessary to reach the targeted employment growth rate of 3.5% per year.

3. Demand Side of Sources of Growth

The analysis of the demand side of the sources of growth, given in the next two tables, provides an additional insight into the anatomy of growth of the Serbian economy. The first table provides the absolute and relative contributions of different parts of demand to the GDP growth rate, while the second one outlines structural changes caused by these movements.

In the pre-crisis 2000-2008 period, as we can see, the final consumption absolute contribution to the GDP growth rate (4.91%) was just a bit lower than GDP growth rate (4.96%) and, as a consequence, its share in GDP decreased slightly from 97.2% to 97.11% in 2008. Due to the economic crisis, its absolute contribution to the GDP growth was higher in the entire 2000-2010 period (3.95%) than GDP growth rate

(3.72%) and, consequently, its share in GDP increased to 99.83%. Its share in the rate of growth of GDP was above 106% in the whole period and almost 99% in the pre-crisis period.

Table 8: Demand side of the sources of growth analysis for Serbia

SOURCES	2000-2008		2000-2010	
	Contribution	Share	Contribution	Share
GROSS DOMESTIC PRODUCT (GDP=A+B+C+D+G)	4.96%	100.00%	3.72%	100.00%
(A) Final consumption expenditure	4.91%	99.01%	3.95%	106.24%
1. Individual consumption expenditure	4.92%	99.18%	4.02%	108.07%
1.1. Household sector	3.85%	77.59%	3.20%	86.04%
1.2. Sector of NPISHs[2)]	-0.01%	-0.27%	-0.02%	-0.48%
1.3. Government sector	1.08%	21.86%	0.84%	22.51%
2. Collective consumption expenditure	-0.01%	-0.17%	-0.07%	-1.83%
(B) Gross fixed capital formation	2.30%	46.29%	1.19%	31.99%
(C) Changes in inventories	1.52%	30.64%	0.57%	15.22%
(D) Acquisitions less disposals of valuables	0.00%	0.01%	0.00%	-0.03%
(E) Exports of goods and services[3)]	3.87%	78.09%	3.49%	93.84%
(F) Imports of goods and services[3)] (-)	7.64%	154.04%	5.48%	147.29%
(G) NET EXPORT	-3.77%	-75.95%	-1.99%	-53.45%

Source: Author's calculation based on RZS data

The gross fixed capital formation also experienced a strong growth. Its absolute contribution to the growth rate of GDP was 2.3% in the pre-crisis period and 1.19% in the entire period. On the other hand, its relative contribution was 46% and 32% respectively. As a consequence, its share in GDP increased from 12.7% in 2000 to 23.8% in 2008, and then, due to the economic crisis, dropped to 17.8% in 2010. The share of investment in GDP was, as we already told, about 18% in the entire period. No doubt, it is low and far from being optimal. For a country like Serbia the optimal investment rate should be around 30%, if not even larger. The golden rule of the investment rate says that this rate should be equal to the share of the capital owners' in GDP.

Finally, and most importantly, the negative net export also had the high absolute contribution to the GDP growth rate: in the pre-crisis period it was around -3.77% and in the entire period it was -1.99%. Its relative contribution to the growth was -76% and -53% respectively. Consequently, its share in GDP increased from 5.36% in 2000 to 26.86% in 2008, and then dropped to 17.06% in 2010.

Notice also that a share of net export in GDP was remarkably higher than that of investment in 2008 and almost equal to a share of investment in 2010. Since the net export is covered mostly by positive inflow of foreign direct investment (DFI) and to some extent, especially after 2008, with foreign loans, it means that Serbian investments, and a good deal of other spending, are financed from external sources. This can be even clearly seen from the last column of the second table where we presented the ratio of net export to gross investment spending. In 2000 this ratio was 42%, and then in 2008 it increased to 113%, and finally dropped to around 96% in 2010.

Since the negative value of net export is covered with the positive value of capital account, it means that, apart from having the low investment rate (around 18%), Serbian investments are mainly covered with external sources. Domestic saving is, in other word, almost negligible. The Serbian growth model can, therefore, be described as the one in which direct foreign investment (DFI) and other foreign sources present the main and the only engine of growth. Such extreme growth model can be questioned on the basis of its' long run sustainability and on the basis of its' macroeconomic stability and external vulnerability. Investments, in general, are usually regarded as residual spending. Consequently, DFI can be treated as residual of residual. Being addicted to such a volatile variable, and it is the case with all SEE economies, is extremely dangerous indeed. On the other hand, this growth model is problematic from the point of view of its long run sustainability. It is very difficult to determine what long run sustainable level of the foreign capital inflow is, and consequently, the long run level of the sustainable level of negative net export. In the case of Serbia, so far, the main channel for foreign capital was that of privatization of existing companies. This source is already exhausted and Serbia has to find some other good foreign investors in "green-field" investment. This, however, requires improvement of business environment. Finally, and probably most importantly, it is necessary to increase domestic saving as the source of investment. This is not only a good way to increase the rate of investment and to make it less volatile, but also has some very important positive social consequences, like faster development of domestic "productive" business elite, to mention just one.

Table 9: Evolution of the gross domestic product structure in Serbia

	USAGE OF GDP - Structure, %								
	1997	2000	Δ 2000-1997	2008	Δ 2008-2000	2010	Δ 2010-2008	Δ 2010-2000	Δ 2010-1997
GROSS DOMESTIC PRODUCT (GDP)	**100.**	100	0	100	0.00	100	0.00	0.00	0.00
(A) Final consumption expenditure (1+2)	94.61	97.20	2.5	97.11	-0.09	99.83	2.71	2.62	5.22
1. Individual consumption expenditure	81.82	86.51	4.69	90.05	3.54	93.22	3.17	6.71	11.40
1.1. Household sector	70.12	76.14	6.02	76.03	-0.11	79.21	3.18	3.07	9.09
1.2. Sector of NPISHs[2)]	0.86	1.50	0.63	1.00	-0.50	0.95	-0.05	-0.55	0.08
1.3. Government sector	10.83	8.87	-1.96	13.02	4.15	13.06	0.03	4.19	2.22
2. Collective consumption expenditure	12.79	10.69	-2.10	7.06	-3.63	6.61	-0.45	-4.08	-6.18
(B) Gross fixed capital formation	10.41	12.71	2.30	23.76	11.05	17.78	-5.99	5.06	7.37
(C) Changes in inventories	1.28	-4.56	-5.84	5.97	10.53	-0.54	-6.51	4.02	-1.82
(D) Acquisitions less disposals of valuables									
(E) Exports of goods and services[3)]	18.47	11.33	-7.14	31.39	20.05	35.98	4.59	24.65	17.51
(F) Imports of goods and services[3)] (-)	24.77	16.69	-8.08	58.25	41.56	53.04	-5.21	36.35	28.27
(G) NET EXPORT	-6.30	-5.36	0.94	-26.86	-21.50	-17.06	9.80	-11.71	-10.76
NEX / Gross Fixed Capital	-60.5	-42.14	18.4	-113.1	-70.9	-95.98	17.06	-53.8	-35.5

Source: Author's calculation based on RZS data

In the case of Serbia, this extreme growth model, which is, by the way, common to all SEE countries, has some other shortcomings that make the situation even worse. The declared monetary target of the National Bank of Serbia is price stability, while the currency exchange regime is supposed to be the (managed) floating one. Due to relatively high capital inflow and liberalized capital account, Dinar appreciated significantly in the pre-crisis period. As a result, the competitive position of Serbian tradable industries deteriorated to such a low level that their pure existence itself became a mission impossible. Consequently, the export activities, mainly manufacturing, deteriorated to the historical minimum. The import, on the other hand, was extremely stimulated and increased significantly, causing trade and related “service” activities to flourish around it. Things are, however, even worse because, due to “eurization” of the banking system (above 70%), the National Bank of Serbia came in a position to defend this appreciated Dinar and de facto adopt a quite different monetary target from the declared one. Defending the appreciated Dinar is now the only way to save the banking system and, in that way, the whole economic system from collapse. In those circumstances the “market” lost its ability to absorb a great part of adverse external shocks and stabilize the level of economic activity: it is not possible to increase the export via depreciation of Dinar, something that is natural to expect when the capital inflow is at the lower level. And that is exactly what happened with the economic crisis. All this, on the other hand, increased the burden on fiscal policy: it became the only way to stabilize the economy. Since, however, the ongoing crisis is not just an ordinary business cycle but a long run structural crisis of the whole “new” world system, it was obvious, at least to those few who knew what was going on, that this cure wouldn’t work for more than a couple of years. That is how and why Serbia’s public debt increased so quickly from a relatively low level to unbearable and dangerous one. And that is how and why we got into a position to pursue this new policy of saving. Policy of saving, unfortunately, is not the solution for problems either.

4. Sectoral Side of Sources of Growth

The analysis of contributions of different sectors to the economic growth is given in the next table. The resulting changes of the sectoral structure of the economy are presented in the table that follows after that.

Table 10: Contribution of different sectors to the economic growth of Serbia

	Relative Contribution of Different Activities to the Growth Rate of Gross Value Added									
		2000-2008			**2008-2010**			**2000-2010**		
	SOURCES	Growth Rate	Contribution	%	Growth Rate	Contribution	%	Growt Rate	Contribution	%
	TOTAL	4.09%	4.09%	100	-1.15%	-1.15%	100	3.02%	3.02%	100.0
A	AGRICULTURE, FORESTRY AND FISHING	2.28%	0.28%	6.93	0.17%	0.02%	-1.46	1.85%	0.23%	7.57
B	MINING AND QUARRYING	0.99%	0.01%	0.34	-1.21%	-0.02%	1.81	0.55%	0.01%	0.24
C	MANUFACTURING	1.74%	0.31%	7.58	-7.86%	-1.24%	108.8	-0.26%	0.00%	-0.02
D	ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY	2.09%	0.07%	1.65	-1.83%	-0.06%	5.10	1.30%	0.04%	1.39
E	WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION	-2.44%	-0.05%	-1.16	0.49%	0.01%	-0.54	-1.86%	-0.04%	-1.21
F	CONSTRUCTION	10.08%	0.41%	10.04	-13.61%	-0.65%	57.03	4.88%	0.20%	6.52
G	WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	13.29%	1.38%	33.62	-3.03%	-0.43%	37.95	9.82%	1.01%	33.28
H	TRANSPORTATION AND STORAGE	4.90%	0.26%	6.42	-1.30%	-0.06%	5.48	3.63%	0.20%	6.50
I	ACCOMMODATION AND FOOD SERVICE ACTIVITIES	0.12%	0.00%	0.02	-5.95%	-0.07%	5.74	-1.13%	-0.01%	-0.41
J	INFORMATION AND OMMUNICATION	17.03%	0.70%	17.04	7.70%	0.54%	-47.4	15.10%	0.67%	21.88
K	FINANCIAL AND INSURANCE	6.38%	0.18%	4.43	6.36%	0.23%	-19.9	6.37%	0.19%	6.26
L	REAL ESTATE ACTIVITIES	2.12%	0.26%	6.39	2.38%	0.29%	-25.1	2.17%	0.27%	8.76
M	PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	3.00%	0.09%	2.11	5.50%	0.17%	-14.9	3.49%	0.10%	3.38
N	ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	7.18%	0.07%	1.82	9.41%	0.12%	-10.7	7.62%	0.08%	2.76
O	PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SEC	1.44%	0.08%	1.86	0.33%	0.01%	-1.1	1.22%	0.06%	2.08
P	EDUCATION	-0.60%	-0.03%	-0.74	-0.57%	-0.02%	2.02	-0.59%	-0.03%	-0.94
Q	HUMAN HEALTH AND SOCIAL WORK	0.61%	0.04%	0.92	0.71%	0.04%	-3.26	0.63%	0.04%	1.24
R	ARTS, ENTERTAINMENT AND RECRT	1.89%	0.02%	0.47	3.90%	0.05%	-3.97	2.29%	0.02%	0.80
S	OTHER SERVICE ACTIVITIES	0.94%	0.01%	0.23	-4.61%	-0.05%	4.62	-0.19%	0.00%	-0.09
T	ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS	0.75%	0.00%	0.02	3.49%	0.00%	-0.31	1.29%	0.00%	0.04
U	ACTIVITIES OF EXTRATERRITORIAL ORGANISATIONS AND BODIES	0.00%	0.00%	0.00	0.00%	0.00%	0.00	0.00%	0.00%	0.00

Source: Author’s calculation based on RZS data

The presented results on trends and structural changes are not surprising, having in mind the existing model of growth in which the foreign capital plays the most important role in the dynamics of the economy. Most striking in that respect are the results on the contribution of the broadly defined "trade" sector to the economic growth (row G). Its absolute contribution to the Gross Value Added growth rate was 1.38% in the pre-crisis period and 1.01% in the entire period. Figures on the relative contribution are even more revealing: almost 34% of all economic growth is attributable to the growth of the "trade" sector. As a consequence, a share of this sector doubled in the first decade of the millennium: its share increased from around 7% to around 14%.

Table 11: Sectoral structure of the Serbian economy (based on current prices)

Structure of Gross Value Added by Activities							
		2000	**2008**	**2010**	**Δ2000-2008**	**Δ2000-2010**	**Δ2008-2010**
	TOTAL	100.00%	100.00%	100.00%			
A	AGRICULTURE, FORESTRY AND FISHING	11.91%	10.35%	10.63%	-1.56%	-1.28%	0.28%
B	MINING AND QUARRYING	2.26%	1.78%	1.78%	-0.49%	-0.49%	0.00%
C	MANUFACTURING	19.53%	16.27%	14.14%	-3.26%	-5.39%	-2.13%
D	ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY	3.57%	3.06%	3.02%	-0.51%	-0.55%	-0.04%
E	WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES	2.33%	1.39%	1.43%	-0.94%	-0.89%	0.05%
F	CONSTRUCTION	3.23%	5.06%	3.86%	1.83%	0.63%	-1.19%
G	WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	7.37%	14.52%	13.98%	7.15%	6.60%	-0.55%
H	TRANSPORTATION AND STORAGE	5.01%	5.33%	5.31%	0.32%	0.31%	-0.02%
I	ACCOMMODATION AND FOOD SERVICE ACTIVITIES	1.53%	1.12%	1.02%	-0.41%	-0.52%	-0.11%
J	INFORMATION AND COMMUNICATION	2.60%	6.63%	7.87%	4.03%	5.28%	1.24%
K	FINANCIAL AND INSURANCE ACTIVITIES	2.83%	3.37%	3.90%	0.54%	1.07%	0.53%
L	REAL ESTATE ACTIVITIES	13.42%	11.52%	12.36%	-1.90%	-1.06%	0.84%
M	PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	3.20%	2.94%	3.35%	-0.26%	0.15%	0.41%
N	ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	0.96%	1.21%	1.48%	0.25%	0.53%	0.27%
O	PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY	5.15%	4.19%	4.31%	-0.96%	-0.83%	0.13%
P	EDUCATION	5.58%	3.86%	3.90%	-1.72%	-1.67%	0.05%
Q	HUMAN HEALTH AND SOCIAL WORK ACTIVITIES	6.67%	5.08%	5.28%	-1.59%	-1.39%	0.19%
R	ARTS, ENTERTAINMENT AND RECREATION	1.33%	1.12%	1.24%	-0.21%	-0.09%	0.12%
S	OTHER SERVICE ACTIVITIES	1.41%	1.11%	1.03%	-0.31%	-0.38%	-0.08%
T	ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS; UNDIFFERENTIATED GOODS- AND SERVICES-PRODUCING ACTIVITIES OF HOUSEHOLDS FOR OWN USE	0.13%	0.10%	0.11%	-0.03%	-0.02%	0.01%
U	ACTIVITIES OF EXTRATERRITORIAL ORGANISATIONS AND BODIES	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: Author's calculation based on RZS data

Another interesting result is the negligible absolute and relative contribution of manufacturing to the economic growth. In the whole period its rate of growth was a bit more than a half per cent (0.55%) and in the pre-crisis period it was 0.99%. The absolute contribution of manufacture to the economic growth rate was 0.31% in the pre-crisis period and -0.26% in the entire period, while its relative contribution was 7.5% and 0.0% respectively. As a result, a share of manufacture in GVA decreased from 19.53% in 2000 to 14.14% in 2010. Although, this decrease in share of 5.39 percentage points was significant, we should keep in mind that at the beginning of the millennium the Serbian manufacture was already, for well-known reasons, at a very low level. The same apply to other activities that belong to what we used to call "industry". As a consequence, "industry" now makes less than 45% of what it used to be in 1989.

So what we got in Serbia is deindustrialization followed with a bubble of the "trade" sector. All this can be explained with the same factors with which we explained changes in the demand structure of the economy. In fact, the industry structure changes are the mirror image of the demand structure changes. As a result of the appreciation of Dinar, the terms of trade in Serbia changed in a way that have had the negative effect on the growth of export-related activities, mostly the "industry" sector, and the positive effect on the growth of import-related activities, such as the broadly defined "trade". Needless to say, Serbia's "trade" bubble is the result of the same global processes that produced bubbles in the financial sectors of developed countries.

5. Policy and Institutional Prerequisite for Liberation of Growth Reserves

As already explained, two kinds of growth reserves are crucial for the future growth rate of the Serbian economy. Firstly, it was already estimated that Serbia could (and should) increase the participation ratio growth rate to the level of 3.5% per year. Secondly, it is also shown that the existing sources of TFP growth are exhausted and that Serbia should rely in the future on the advance of "broader knowledge" as a source of its growth. Defined in that way, TFP can grow at the rate of 2.4% per year. What are, however, "soft" prerequisites for liberation of these reserves? No doubt, what Serbia needs is an active economic policy oriented toward "reinventing economy" (Housmann at all, 2005).

There are two important limitations that should be overcome or, at least, taken in account when deciding about kind of economic policies that can be implemented. The first limitation is related to the existing political economy at the national level. This is a complicated issue and can't be properly covered within one paragraph. A safe way to make a story short and relevant for the issue is to focus on broadly defined corruption. A degree of corruption is at such level that Serbia, like other SEE countries, can be treated as "state captured". Corruption widgets and its distortions are obviously much higher than those of all taxes and other widgets. Since any economic policy assumes, in one way or another, redirecting of income, further strengthening of the state role in the economy would, in that circumstance, make things much worse than what they are now. It would just open new "markets" for corruptive and rent seeking activities. Some economists believe and argue that the only way to eradicate corruption is further privatization and further reduction of the state role in the economy. Unfortunately, experience so far shows that this is not the cure. Privatizations of energy sectors and water supply systems, for example, show that corruption in fact flourished to the astonishing level not only during the process of privatization but even worse after that. On the other hand, further unselective liberalization and reduction of the state role in the economy would make us unable to eliminate market failures and distortions caused by them. Those failures are especially numerous and strong in small countries like Serbia and other SEE countries (non-competitive market, spillovers, coordination of complementary activities, information issues, and other). Not rarely, without eliminating or, at least, mitigating market failures it might happen to be impossible to jump on the converging growth path. Consequently, corruption can be treated as "distortion of all distortions". So, the first thing to do in order to get out of this "straightjacket" and to start thinking about possible economic policies is to eradicate corruption entirely.

The second limitation is related to the globally attained level of liberalization. For example, if we want to use benefits of the global and EU markets we should follow rules imposed by WTO and EU. We, therefore, cannot use trade policies. Since, technically speaking, trade policies are less expensive and give immediate effects and since Serbia has a lot of "infant industry" arguments (or, better, "recovering" industry arguments), it might be regarded as a serious limitation. Note, however, that the trade policy has hard political economy that very often can stimulate the chosen industry to remain "infant" ("recovering") forever. Similarly, capital account liberalization, aimed at attracting additional sources of capital, assumes giving up the active exchange rate policy. When matched with the growth model that relies too heavily on foreign capital, it is a serious limitation: strong inflow of foreign capital inevitably leads to appreciation of domestic currency which in turn has an adverse effect on domestic industries. However, as it is already explained, when, on top of that, this policy is matched with “eurization” through the banking system, as in Serbia, it has an even more adverse effect: net export accounts loose ability to stabilize economy via expected depreciation of domestic currency when the capital inflow is reduced. This serious limitation is one that can be and should be eliminated as soon as possible. The Serbian banking system, in other words, should be “dinarized” again. The “only” problem is that this cannot be done so quickly. This can be attained only in the long run. At the moment it seems impossible to apply any other radical exchange rate policy. If, however, it becomes obvious that the Serbian position regarding EU integration is a mission impossible or that the EU efforts to save euro and “rediscover” Europe are seriously stuck, then Serbia should definitively consider more radical exchange rate policy and probably trade policy, including further geographical diversification of its international economic relations. Since both of these possibilities are far from being unlikely, it seems appropriate to develop at least strategies for this situation. It should especially try to identify the optimal policy of the exchange rate.[5]

Having the above in mind, it is clear that the most powerful policy tools are currently within the active and selective industrial policy. Once the problem of corruption is overcome, it can be a powerful tool to eliminate and mitigate all those distortions that are the result of numerous market failures. This is the only way to find an optimal combination of the “invisible” hand of the market and the “visible” hand of the state. Serbia is currently using active industrial policy tools but they seem to be unsystematic, pretty expensive (one year workers’ salary paid by the state, for example), and oriented almost solely toward attracting foreign investors. An effort to develop a systematic set of industrial policy tools should consider the following issues. First of all, in order to overcome the problem of generating business ideas and, in that way induced, the problem of small absorption capacity on the side of investment demand, arising due to “spillovers” and a lack of big companies able to develop their own R&D units, Serbia should complete its national innovation system (NIS). At the functional level it assumes redefining the role of universities (strengthening and focusing the research line of “business”) and existing institutes, developing new and strengthening existing incubators and business centers, stimulating clusters development, integrating activities of universities and institutes with those of incubators, and similar. Not

[5] It is interesting that the concept of optimal exchange rate is still not developed within the economic theory. Instead, economist developed the concept of the long run equilibrium real exchange rate. Theoretically, later can be defined as the rate at which conditions for both, internal and external macroeconomic stability are satisfied (Baffes et al., 1997; Montiel, 1997, 1999, 2001; Taulaboe, 2001). Internal macroeconomic stability assumes that demand and supply for untradeables are equal. External macroeconomic stability, on the other hand, assumes compatibility between the current account position and the long-run sustainable capital account inflow / outflow (Krugman and Obstfeld, 2009). The problem with this concept is that it does not explain clearly what is either the long-run or sustainable level of capital account inflow / outflow. In different econometric exercises it has been defined pretty arbitrarily. The concept of optimal exchange rate is much more relevant and it, naturally, should be developed within the framework of welfare economics and the framework of optimal inter-temporal allocation within the international trade context. As far as I know there is only one research that explicitly uses the concept of the optimal exchange rate (Rodrik, 2008). Although not defined in the framework of welfare economics, but as the exchange rate that maximizes the GDP growth rate, this research is very important, especially its findings that almost all episodes of high growth rates in different countries from 1954 to 2004 have been accompanied by the depreciated real exchange rate.

less important is the geographical level which assumes covering remote and undeveloped regions with part of this unique architecture of knowledge (mainly with incubators and business centers). Secondly, since the commercial banking system is not able to either provide a high level of domestic saving or to follow all investors with good business ideas (lack of collateral), it is necessary to create some new financial institution(s) (developing bank or fund, or something else) that would fill this gap. It seems reasonable that this institution should be closely related with NIS, maybe, part of it. Thirdly, the state should identify all possible activities that have problems in coordinating complementary activities and find way to mitigate these problems. The agro-complex (farmers - food industry - trade) is a notorious and well understood example that comes under this heading. Nevertheless, Serbia still has not developed a strong and reliable policy in that strategic activity. Less understood is the case of the construction complex and a problem of coordination between construction services, production of materials for construction services, education of labor for that activity, lack of spatial and urban plans and similar. It seems that Serbia, a country that made the hydro plant Djerdap and a lot of great projects around the world, is currently having great problems when it has to make the bridge across the Danube or 200 km of highway. These are just the most important examples. Fourthly, all the above mentioned and other policies should be designed in a way to stimulate development of less developed regions of Serbia. Other policy measures should be developed. Demographic policy measures might be especially important and powerful. Fifthly, development of roads and other infrastructure is the par excellence state responsibility that is supposed to increase connectivity within the country and with other countries. Finally, all those measures that go under the heading of elimination of administrative barriers are of crucial importance. They are already very well understood and advocated. Realization of the proposed measures is the only thing that is missing here.

6. Convergence

For the convergence analysis two projections are given for Serbia and two projections for EU, one for EU27 and one for EU15 countries. The first scenario for Serbia is the one based on assumptions that the existing growth model will prevail, while the second scenario is based on assumptions that a new growth model, aimed at using the existing growth reserves, will be applied. Projections are somewhat simplified: they are given by applying an adequate rate of growth. So, the Serbian economy does not converge smoothly, as it should, to the EU 27 growth path but intersects it in certain years instead. Moreover, projections do not refer for the following calendar years but for the years immediately after the end of the crisis and, in the case of the second scenario, after the beginning of implementation of the new growth model. Calculations are, naturally, given in euro and at the 2012 price level. The basic figures for these projections for certain years are presented in the following table.

Basically, the historic scenario (S-1) of the GDP per capita is equal to multiplication of the projected employment population ratio and the GDP per employee. The employment population ratio projection is based on the assumption that employment and population will grow at the existing rates of growth. The GDP per employee growth rate is assumed to be equal to that in the pre-crisis period reduced for the expected reduction in the growth rate of the total factor productivity. We assumed that the growth rate of TFP will be 1.4%. It is, as we know, half of that in the pre-crisis period. It is, however, still very high compared to other countries in the region and especially having in mind our earlier finding that the existing model's sources of the TFP growth is already exhausted.

Table 12: Scenarios of GDP per capita growth for Serbia, EU 27, and EU 15

	(S-1) Basic Scenario			*(S-2) New Model Scenario*		*(S-2) / (S-1)*		*Serbia relative to EU27*			*(S-2) GDP pc in PPS*		*Serbia relative to EU15*		
Year	**GDP pc**	**L / P**	**GDP/L**	**GDP pc**	**GDP/L**	**GDP pc**	**GDP/L**	**EU27 GDP pc**	**GDP pc SRB S-1 / EU27**	**GDP pc SRB S-2 / EU27**	**SRB S-2 GDP pc in PPS**	**Relative to EU27**	**EU15 GDP pc**	**GDP pc SRB S-1 / EU15**	**GDP pc SRB S-2 / EU15 b2011**
0	4,290	0.241	17,834	4,290	17,834	1.00	1.00	25,100	17.09%	17.09%	8,785	35.00%	29,100	14.74%	14.74%
5	5,175	0.251	20,603	6,110	21,625	1.18	1.05	27,100	19.10%	22.55%	10,606	39.14%	31,043	16.67%	19.68%
10	6,243	0.262	23,802	8,703	26,222	1.39	1.10	29,260	21.34%	29.74%	12,804	43.76%	33,116	18.85%	26.28%
15	7,532	0.274	27,498	12,396	31,795	1.65	1.16	31,591	23.84%	39.24%	15,458	48.93%	35,328	21.32%	35.09%
20	9,086	0.286	31,767	17,656	38,554	1.94	1.21	34,108	26.64%	51.76%	18,661	54.71%	37,687	24.11%	46.85%
25	10,961	0.299	36,699	22,109	46,749	2.02	1.27	36,826	29.76%	60.04%	22,529	61.18%	40,203	27.26%	54.99%
30	13,222	0.312	42,398	26,809	56,686	2.03	1.34	39,761	33.25%	67.43%	27,198	68.41%	42,888	30.83%	62.51%
35	15,951	0.326	48,981	32,508	68,736	2.04	1.40	42,929	37.16%	75.72%	32,835	76.49%	45,752	34.86%	71.05%
40	19,242	0.340	56,586	39,417	83,347	2.05	1.47	46,350	41.52%	85.04%	39,641	85.53%	48,807	39.43%	80.76%
47	25,022	0.361	69,256	51,627	109,163	2.06	1.58	51,601	48.49%	100.05%	51,601	100.00%	53,430	46.83%	96.62%
49	26,972	0.368	73,372	55,764	117,911	2.07	1.61	53,208	50.69%	104.80%			54,830	49.19%	101.70%

Source: Author's calculations based on the assumptions given in the paper.

The second scenario (S-2) for Serbia is based on the assumption that the existing growth reserves will be fully used and liberated. First of all, it assumes that the growth rate of TFP will be 2.4% and that it will be based on advancement of "broader knowledge". Secondly, we assumed that employment would grow at the 3.5% rate in the next 20 years and that, in these circumstances, the population will also grow slightly – 0.1%. After 20 years, as already explained earlier, this employment reserve will be exhausted.

The projection of the GDP per capita for EU27 is based on the assumption that the GDP per capita growth rate will be equal to that in the period from 1995 till now. The projection of the GDP per capita for EU15 is based on the same assumption.

Finally, projections of the Serbian GDP per capita in PPS is based, firstly, on the assumption that in the year in which the Serbian GDP per capita reaches that of EU27, its PPS GDP per capita will reach the level of 100%, and secondly, by applying the implied rate of growth for other years.

The figures from the tables speak for themselves. First of all, note that even under the dynamic S-2 scenario Serbia would reach the GDP per capita level of EU27 countries only after 47 years and that of EU15 countries after 49 years. Under the S-1 scenario Serbia would at that time be approximately at 50% of the European GDP pc and its own potential GDP pc level. Or to put it another way, with the existing S-1 scenario Serbia GDP per capita would reach the level of EU27 GDP per capita only after 80 years. On the other hand, the current GDP per capita level of EU27 countries would be reached after 29 years under the S-2 scenario and after 47 years under the S-1 scenario (not shown in the table). The current GDP per capita level of EU15 countries would be reached after 33 years assuming the S-2 scenario and after 51 years assuming the S-1 scenario.

7. Conclusions

Growth rate of GDP per capita in Serbia has been pretty decent if not high in the first decade of this century. However, contrary to theoretical expectation, it has not been welfare improving mainly due to the fact that this growth was not followed with increase of employment, which was negative in whole period, but solely with increase of labor productivity. Strong increase of labor productivity, on the other hand, was result of strong increase of capital labor ratio and amazingly high TFP growth rate that happen to explain almost 60% of the GDP growth rate.

This jobless growth with high increase of TFP is a puzzle that can be explained with inappropriate process of privatization and other reforms undertaken in respected period. New domestic and foreign owners of privatized companies reduced the level of hidden unemployment and, in that way, increased TFP. Since new investment in new capacities was not sufficient to compensate for this effect, number of employee decreased for around 400.000 workers. This process was also reinforced with unnecessarily sudden capital account and trade account liberalization that, by giving too much power to world market arbitrage in spatial processes, especially wounded less developed regions by shutting down mainly labor intensive capacities located there.

More importantly, capital account liberalization inaugurated model of growth in which foreign capital became the main and the sole engine of growth. This extreme growth model is problematic both on the ground of its' long run sustainability and on the ground of its' external vulnerability. Due to high capital account inflow in the pre crisis period Dinar's real exchange rate appreciated significantly and, as a consequence, competitive position of domestic tradable sector deteriorate. Result is decrease of export and increase of import followed with deindustrialization and bubble of broadly defined “trade” sector.

Reindustrialization and increase of export are key words in all discussions about new growth model of Serbia. However, due to already accepted level of liberalization, policy instruments are pretty limited. Trade policy is not feasible if Serbia want to be part of EU and WTO. Active exchange policy rate is also not possible due to liberalization of capital account matched with “eurization” of banking system. Power of fiscal policy is already exhausted. So, we are left only with selective industrial policy. However, before start applying this policy Serbia has to eradicate corruption entirely. Otherwise situation may become much more difficult than what it is now. Corruption is in the case of all SEE countries “distortion of all distortions”. Serbia has to get rid of that “straightjacket” in order to make any state policy legitimate and effective.

Finally, If, and when, it becomes obvious that the Serbian position regarding EU integration is not feasible or that the EU efforts to “rediscover” Europe are seriously blocked, then Serbia should definitively consider more radical exchange rate policy and even trade policy instruments. Further geographical diversification of its’ international economic relations should also be strengthen. Since both of above mentioned possibilities are far from being unlikely, it seems that country should be prepared for such kind of changes as well.

References

Acemoglu, D. (2008). *Introduction to Modern Economic Growth*, Princeton University Press, p. 1227.

Agnion, P. and Howit, P. (2009). *Economics of Growth,* Massachusetts Institute of Technology.

Baffes, J., Elbadawi, I. A. i O’Connell, S. A. (1997). Single Equation Estimation of the Equilibrium Real Exchange Rate, World Bank Policy Research Working Paper, No. 1800, p. 52.

Baro, R. J., and Sala-i-Martin, X. (1995). *Economic Growth,* McGrow-Hill Inc.

Benabou, R. and Ok, E. A. (2001). Social mobility and the demand for redistribution: The POUM hypothesis. The Quarterly Journal of Economics, 116 (2), 447–487.

Crafts, N. and Toniolo, G. (1996). Postwar Growth: An Overview. in *Economic Growth in Europe Since 1945,* edited by Crafts, N., and Toniolo, G., Cambridge University Press.

Denison, E. (1967). *Why Growth Rates Differ*. Washington, Brooking Institution.

Denison, E. (1985). *Trends in American Economic Growth 1929-82.* Washibgton, D. C., Brooking Institute.

Housmann, R., Rodrik, D., Velasco, A. (2005). *Growth Diagnostics*, John F. Kennedy School of Government, Harvard University, mimeo, p. 35.

IMF (2012). What Has Kept Croatia’s Growth Low and How to Boost It? *IMF Country Report No. 12/303*, Republic of Croatia – Selected Issues, IMF, Washington, pp. 55.

Jorgenson D. W., and Griliches Z. (1967). The Explanation of Productivity Change, *Review of Economic Studies* 34(3): 249-80.

Krugman, P. i Obstfeld, M. (2009). *International Economics: Theory and Policy,* 8th edition, Pearson Education Inc. p. 706.

Madison, A. (1987). Growth and Slowdown in advanced Capitalist Economies: Techniques of Quantitative Assesment, *Journal of Economic Literature,* 25, pp 649-98.

Madison, A. (1982). *Phases of Capitalist Development*, Oxford University Press

Mankiw, N. G., Romer, D., and Weil D. N. (1992). A Contribution to the Empirics of Economic Growth, *Quarterly Journal of Economics* 107(2): 407-37.

Mankiw, N. G. (1995). The Growth of Nations, in *Brookings Papers on Economic Activity,* 1: 275-327.

Montiel, P. (1997). The theory of the long run equilibrium real exchange rate, mimeo, Worls Bank.

Montiel, P. (1999). Determinants of the Long Run Equlibrium Real Exchange Rate: An Analitical Model, u Hinkie, L. i Montiel, P.: *Exchange Rate Missalignement: Concepts and Measurement for Developing Countries,* Oxford University Pres for the World Bank, New York.

Montiel, P. (2001). The Long Run Equilibrium Real Exchange Rate: Theory and Measurement, mimeo.

Popovic, M. (1990). Izvori rasta užeg područja Srbije, *Ekonomika,* Beograd, No 4, pp. 33-37. and No 5, pp. 48-51.

Popovic, M. (2010). *Privredni rast Crne Gore – analiza, dijagnoza, alternativa,* Daily Press, Podgorica, p.321.

Rodrik, D. (2008). The Real Exchange Rate and Economic Growth, *Brooking Papers on Economic Activity,* Conference draft, Fall, p. 46.

Romer, D. (2001). *Advanced Macroeconomics,* 2nd edition, McGraw Hill, New York.

Sollow, R. M. (1956). A Contribution to the Theory of Economic Growth, *Quarterly Journal of Economics* 70(1), pp. 65-94.

Sollow, R. M. (1957). Technical Change and the Aggregate Production Function, *Review of Economic and Statistics* 39, pp. 312-20.

Toulaboe, D. (2001). Real Exchange Rate Missalignement and Economic Growth in Developing Countries, *Southwestern Economic Review*.

Županov, J. (1983). Znanje, društveni sistem i „klasni“ interes, *Naše teme*, Zagreb, No 7–8, pp. 1048–54.

Županov, J (1983a). *Marginalije o društvenoj krizi*, Globus, Zagreb, p.176.

World Bank (2012). *Montenegro: Preparing for Prosperity - Ensuring Sustainability, Connectivity, and Flexibility for Dynamic Growth*, Country Economic Memorandum, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region p. 121.